NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

[redacted]

25X1

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basic imagery interpretation report

Shashi Radar Assembly Plant (S)

COMMO/ELEC/RADAR R&D FACILITIES

[redacted]

25X1

CHINA

[redacted]

[redacted]

25X1

RCA-20/0003/80

25X1

AUGUST 1980

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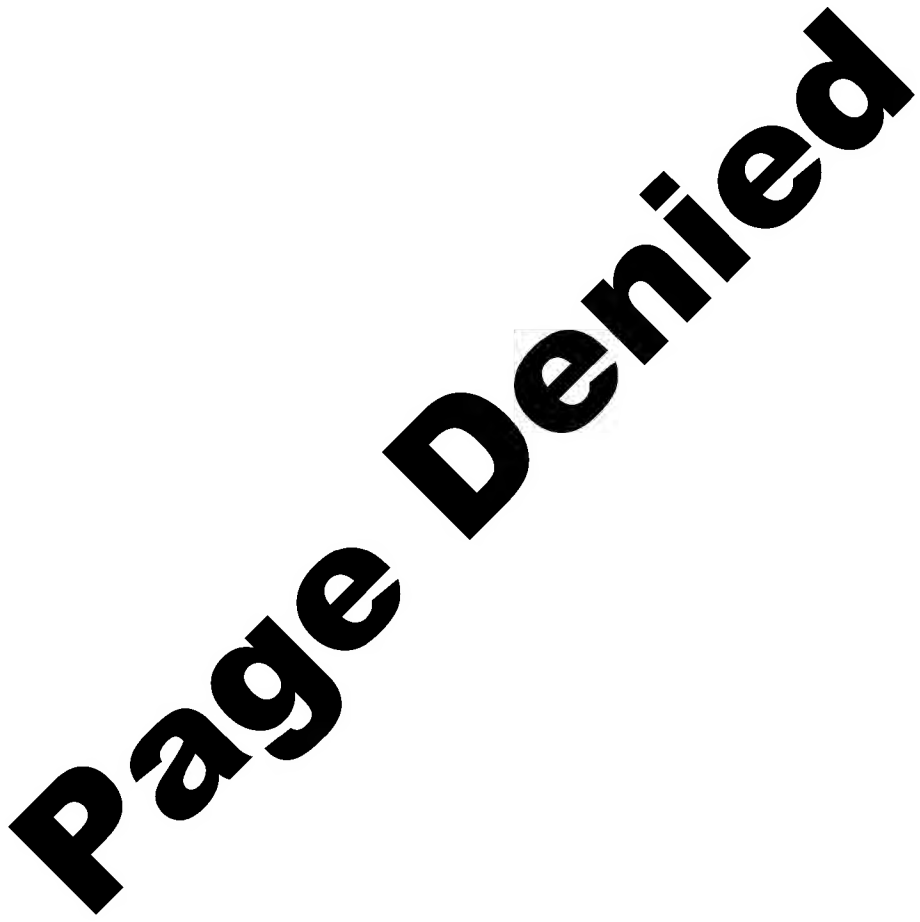

INSTALLATION OR ACTIVITY NAME					COUNTRY
Shashi Radar Assembly Plant					CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETR NO.
NA	30-19-44N 112-13-14E	[redacted]			25X1

MAP REFERENCE

SAC. USATC, Series 200, Sheet 0494-14, Mar 79, scale 1:200,000

LATEST IMAGERY USED	NEGATION DATE (If required)
[redacted]	NA 25X1

ABSTRACT

1. (S/D) Imagery-derived analysis of the Shashi Radar Assembly Plant, China, indicates that series production of the Sha-shih A radar has begun. One Sha-shih B radar has been observed continually since September 1974; however, there have been no indications thus far that this radar has been in series production. In addition, CHOP REST long-range radar production has apparently ended.

2. (TSR) A total of 47 buildings containing 26,970 square meters of floorspace has been added to the plant since February 1974, increasing the total to 64,420 square meters of floorspace. This report describes activity observed at the Shashi Plant from [redacted] 25X1
[redacted] It updates NPIC report [redacted] and satisfies the basic reporting requirement for this 25X1
installation.

3. (U) A location map, seven annotated photographs, two perspective drawings, and two tables are included in this report.

INTRODUCTION

4. (TSR) Shashi Radar Assembly Plant is 3.7 kilometers northwest of Shashi in the Wuhan Military Region (Figure 1) of China. The plant has been involved in the production of CHOP REST, Sha-shih A, and Sha-shih B radars. CHOP REST radars were first seen at the plant in February 1972;[1] however, none of these radars has been seen at the plant since December 1975, indicating that series production of the CHOP REST has ended. A high count of four Sha-shih A radars on [redacted] and two Sha-shih A radars on [redacted] along with three probable 225X1
Sha-shih A radar units (ready for shipment) indicated that series production of the Sha-shih A radar has begun. One Sha-shih B radar was observed at the plant from September 1974 through May 1980; it has not been deployed to any known air warning (AW) site in China to date. The Sha-shih B has not started series production at this time and will probably not be series produced.

5. (S) No signals have been associated with the Sha-shih A or B radars to date.[2]

[redacted] 25X1

BASIC DESCRIPTION

Construction

6. (TSR) Between [redacted] a total of 47 buildings was completed at the Shashi Radar Assembly Plant, including one final assembly building, one fabrication/assembly building, two fabrication/shop buildings, two assembly/shop buildings, one fabrication/engineering building, two component assembly buildings, two shop buildings, one engineering/component test building, one engineering building, one engineering/support building, one shop/support building, four radar test/control sheds, one radar test/calibration building, one vehicle storage/test support building, four vehicle storage buildings, three storage buildings, four storage/support buildings, three administration buildings, one foundry, nine support buildings, and two guardhouses (Figure 2 and Table 1). The 47 buildings contain 26,970 square meters of floorspace, which increases the total floorspace of the plant to approximately 64,420 square meters, a 72 percent increase in floorspace since February 1974.[1] 25X1

7. (TSR) A new production area in the northwest part of the plant (Figure 3 and Table 1) contains 10,438 square meters of floorspace—included in the total of 64,420 square meters of plant floorspace. The new production area was first observed under construction in February 1977, and most of the buildings appeared to be externally complete by November 1979. All of the buildings appeared to be externally complete by April 1980. The new production area consists of an engineering/component test building (item 1, Figure 3), a support building (item 2), a component assembly building (item 3), an engineering building (item 6), two large drive-through fabrication/

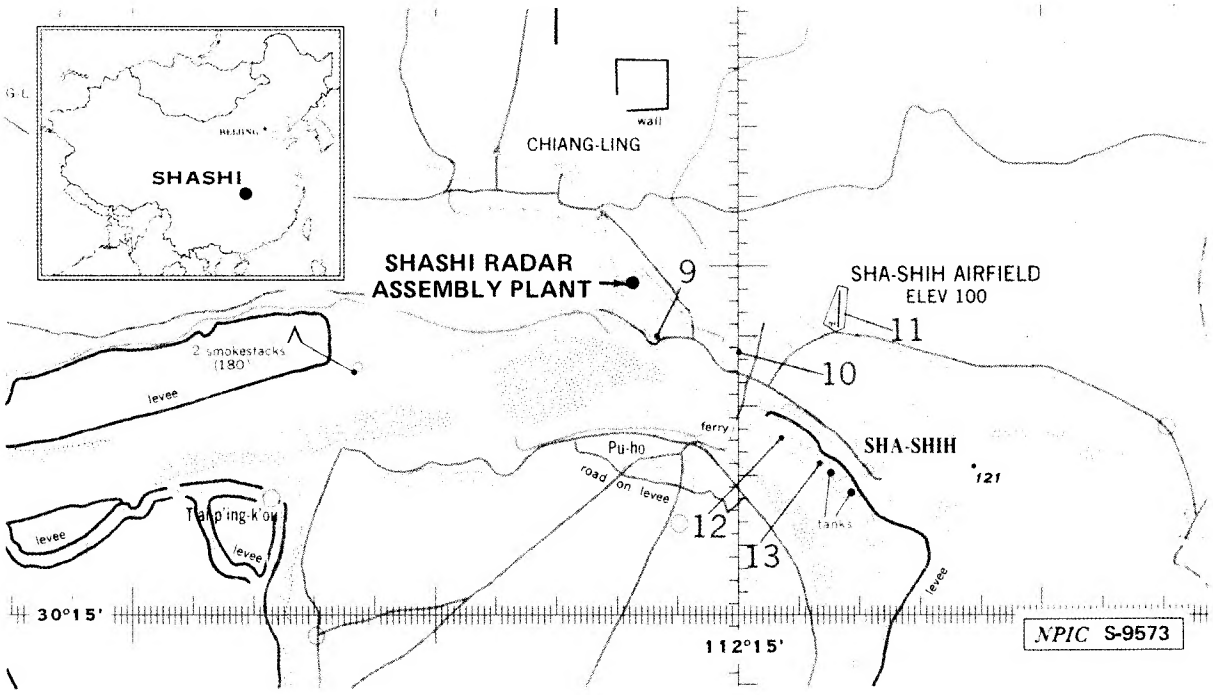

FIGURE 1. LOCATION OF SHASHI RADAR ASSEMBLY PLANT, CHINA

assembly building (items 7 and 8), a component assembly building (item 9), an administration building (item 16), a vehicle storage building (item 17), a large drive-through fabrication/engineering building (item 19), a large drive-through fabrication/shop building (item 20), and a small shop building (item 23). This new production area should significantly increase the production of the Sha-shih radars and other associated electronics equipment.

8. (TSR) The new production area has a concrete interconnecting roadway that serves all the major buildings in this area of the plant. Analysis of imagery of [redacted] indicated an upgrading of some of the roadways in the southeast and older part of the plant. At that time, some of the roadways had been or were being paved with concrete. 25X1

9. (TSR) The plant has two POL storage areas with a total capacity of approximately 270 cubic meters of POL storage (Figure 2).

10. (S/D) The Shashi Plant is served by road. The nearest rail terminus is approximately 70 kilometers west of Shashi; however, a roadway connects Chihching rail terminus to Shashi. In addition, the plant is on the navigable Yangtze River.

Production

11. (S/D) The Shashi Radar Assembly Plant has been involved in the production of CHOP REST radars since February 1972. However, the CHOP REST radar has not been seen at the plant since [redacted] (Table 2), indicating that the CHOP REST will possibly be phased out of the electronics order of battle (EOB) inventory and replaced by the TREE FORK 2/Suuji D radars. 25X1

12. (TSR) Two rectangular radars similar in appearance to the MOON-series type have been present at Shashi plant since [redacted] (Figures 4 through 6). The two rectangular radars have subsequently been designated the Sha-shih A and the Sha-shih B (Table 2) by the National Photographic Interpretation Center (NPIC). Only one Sha-shih B has been seen at the plant; the Sha-shih B appears to be a mattress-type array and is similar in appearance to the MOON series. The Sha-shih B (Figure 7) is [redacted] from ground level to the top of the array. The Sha-shih B radar has remained in the plant area since [redacted] and to date the Sha-shih B has not been deployed to any known AW radar site. 25X1 25X1 25X1

13. (TSR) The Sha-shih A (Figure 8) has also been seen at the plant since [redacted] The Sha-shih A appears to be a mattress-type array, very similar in appearance to the Ta-ku A (modified MOON FACE) radar. The Sha-shih A is [redacted] from ground level to the top of the array. A high count of four Sha-shih A was observed on [redacted] On imagery of [redacted] two Sha-shih A radars and six probable Sha-shih A radar bases (folded down in travel mode) were present in the radar test/checkout area (Figure 4). The high count of Sha-shih A radars seen on imagery of [redacted] along with the first known deployment of the radar to the Longtian Airfield AW Radar Facility (BE [redacted] indicated series production of the Sha-shih A radar. The radar was observed at the airfield on imagery of [redacted] and again on [redacted] (Figure 9). This is the only known deployment of the Sha-shih A to date. 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

14. (TSR) A Sha-shih A radar unit appears to have three associated van trailers, two associated van trucks, two antenna component trucks, and one Sha-shih A radar base (Figures 4 through 6). When observed in the travel/shipping mode, the three van trailers are towed by the two van trucks and a probable antenna component truck. The radar base (folded down) is towed by the

(Continued p. 13)

Table 1.
Construction at Shashi Radar Assembly Plant
(Keyed to Figures 2 and 3)

This table in it entirety is classified TOP SECRET RUFF

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Remarks
1	Engr/component test bldg					Footings ucon Apr 79
a	Sect					
b	Sect					
2	Support bldg					
3	Component assem bldg					2 stories; monitor roof; footings ucon Sep 78
4	Support bldg					
5	Vehicle stor bldg					
6	Engr bldg					3 stories; footings ucon Jul 79
7	Fab/assem bldg					Drive through; footings ucon Sep 78
a	Sect					
b	Sect					
8	Fab/assem bldg					Drive through footings ucon Sep 78
9	Component assem bldg					Footings ucon Sep 78
a	Sect					
b	Sect					
10	Vehicle stor/test support bldg					Sects a & b added since 25 Feb 74
a	Sect					
b	Sect					
11	Radar test/control shed					Const between Aug 79 & Nov 79
12	Radar test/calib bldg					
a	Sect					
b	Sect					
13	Radar test/control shed					Const between Oct 78 & Feb 79
14	Radar test/control shed					Const between Feb 77 & Nov 77
15	Radar test/control shed					Early const Aug 77
16	Admin bldg					2 stories; footings ucon Sep 78
17	Vehicle stor bldg					
18	Guardhouse					
19	Fab/engr bldg					Drive through
a	Sect					Ucon Feb 77
b	Sect					2 stories
c	Sect					
20	Fab/shop bldg					Drive through
a	Sect					High bay
b	Sect					Ucon Feb 77
c	Sect					
21	Support bldg					
22	Fab/shop bldg					

25X1

25X1

25X1

25X1

Item	Description	Dimensions (m) L	W	H	Floorspace (sq m)	Remarks
a	Sect					2 stories
b	Sect					2 stories
c	Sect					
d	Sect					
e	Sect					
23	Shop bldg					2 stories
24	Stor bldg					
25	Vehicle stor bldg					
26	Engr/support bldg					2-story sect completed since Apr 74 report
27	Foundry					Ucon Feb 77
a	Sect					Sects a & b added since Apr 74 report
b	Sect					
c	Sect					
28	Stor/support bldg					
29	Vehicle stor bldg					
30	Support bldg					Ucon Jan 74
31	Assem/shop bldg					Ucon Feb 74
a	Sect					
b	Sect					
c	Sect					
32	Support bldg					
33	Support bldg					Sect added since Apr 74 report
34	Stor/support bldg					
35	Shop bldg					Monitor roof; 2 stories
36	Stor/support bldg					
37	Assem/shop bldg					2 stories; ucon Aug 79
38	Admin bldg					3 stories; ucon Feb 77
39	Stor bldg					
40	Support bldg					
41	Stor bldg					
42	Admin bldg					
43	Guardhouse					
44	Support bldg					Ucon Nov 79
45	Support bldg					
46	Stor/support bldg					
47	Shop/support bldg					
a	Sect					
b	Sect					
c	Sect					
	Total					

25X1

Table 2.
Radars and Associated Electronics Equipment
Observed at Shashi Radar Assembly Plant

This table in its entirety is classified TOP SECRET RUFF

Imagery	CHOP REST	Sha-shih A	Sha-shih B	Van Truck	Van Trailer	Other Equipment
[redacted] 25X1	6	1*	1*	8	15	2 prob radar chassis
	4	0	1*	5	10	2 prob radar base & 3 prob radar chassis
	4 2 (partial assem)	1*	1*	8	15	4 prob radar chassis
	2	1 (prob)* 1 (prob)	1 (prob)*	6	12	
	0	1 (prob)*	0	11	7	3 pieces of equipment
	0	1	1	8	10	3 prob radar bases (canvas covered) & 6 trucks (canvas covered)
	0	0	1 (prob)	7	9	4 prob radar bases, 4 trucks (canvas covered), & 1 prob antenna component truck
	0	1	1	6	8	3 poss radar bases & 3 prob antenna component trucks
	0	0	1	3	6	1 radar base, 1 prob antenna component truck, & 13 truck chassis
	0	0	1	3	6	1 radar base, 1 prob antenna component truck, 11 truck chassis, & 8 prob van trlr chassis
	0	0	1 (prob)	2	8	1 prob radar base, 2 prob antenna component trucks, & 7 truck chassis
	0	0	1 (prob)	8	7	8 truck chassis & 2 pieces of equipment
	0	2	1	10	4	3 prob antenna component trucks, & 8 truck chassis
	0	2	1	10	4	8 truck chassis & 3 cargo trucks
	0	2	1	10	5	9 truck chassis & 4 cargo trucks
	0	2 (1 prob)	1	8	4	9 truck chassis
	0	4	1	8	0	8 truck chassis, 13 prob van trlr chassis, & 7 cargo trucks
	0	2	1	15	13	6 prob Sha-shih A radar bases, 6 prob antenna component trucks, 12 prob van trlr chassis, & 1 prob van trlr
	0	2	1	12	5	3 prob Sha-shih A radar bases & 12 prob van trlr chassis

*Reported as rectangular type.

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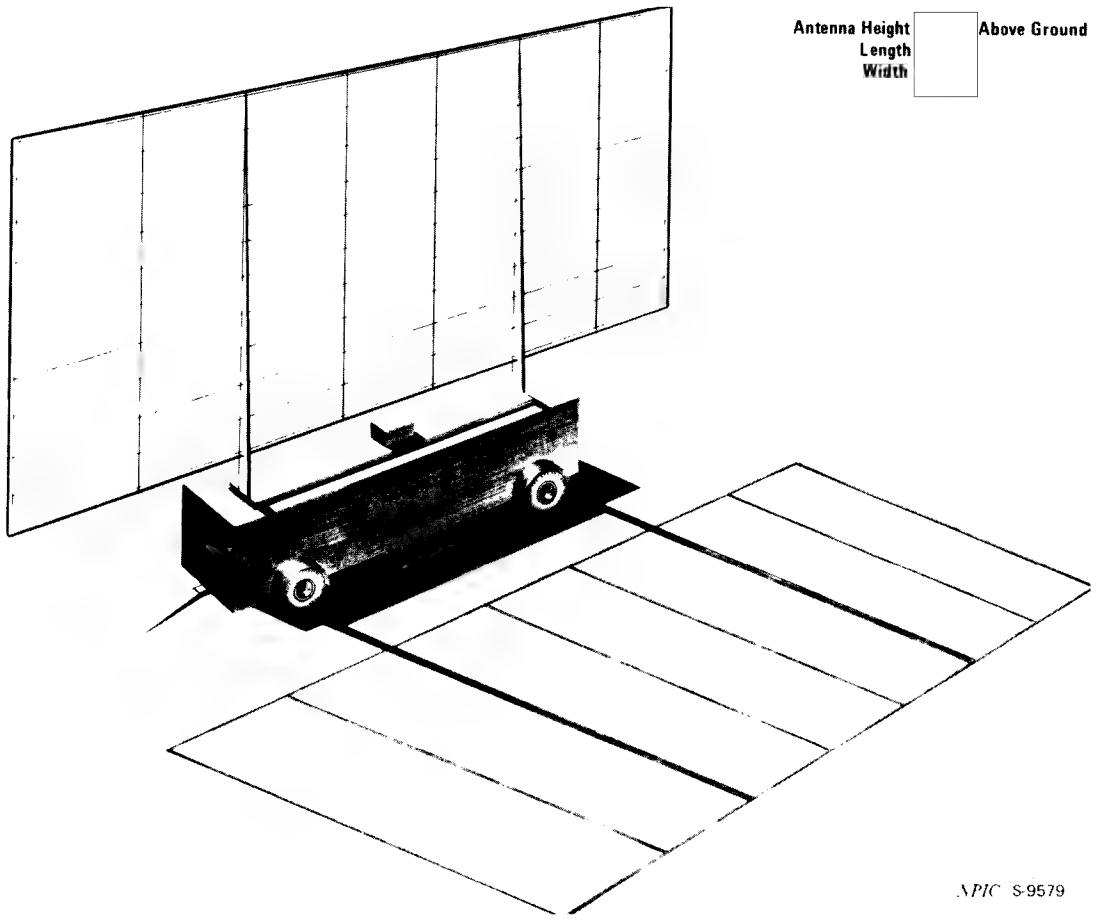

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FIGURE 7. PERSPECTIVE DRAWING OF SHA-SHIH B

25X1

25X1

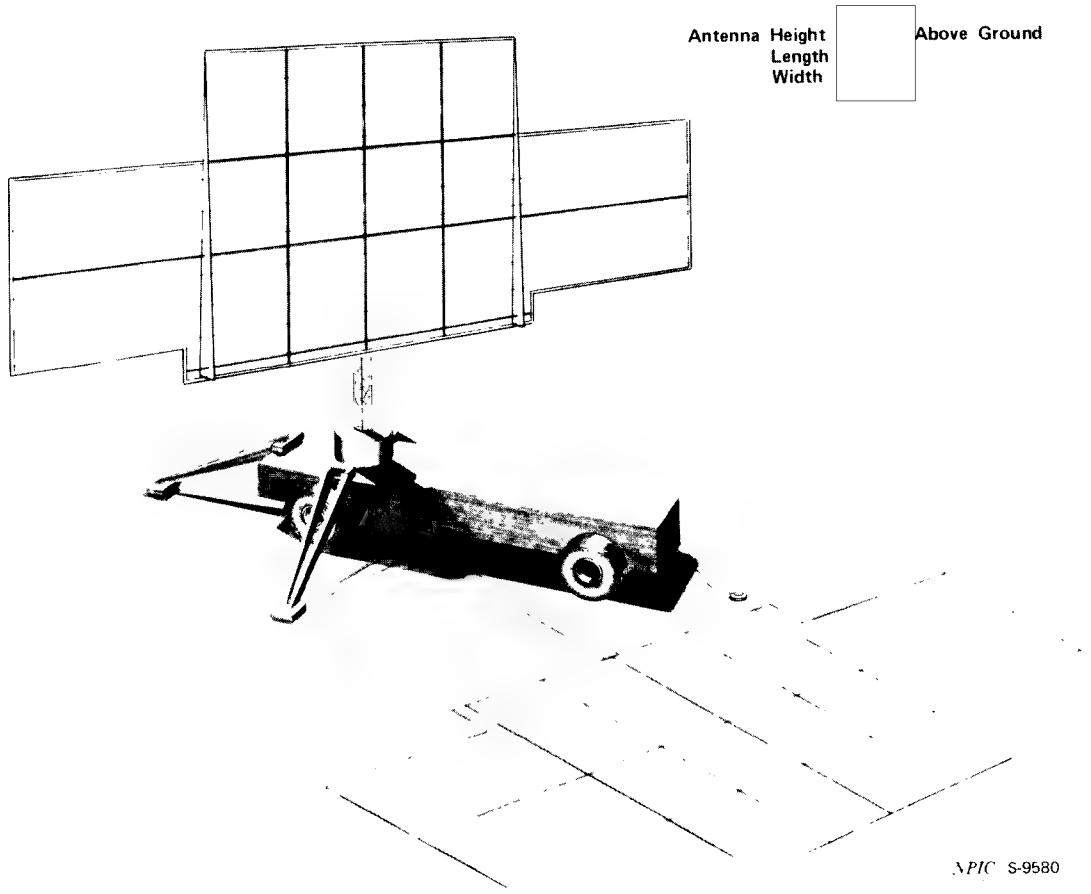

FIGURE 8. PERSPECTIVE DRAWING OF SHA-SHIH A

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other antenna component truck. When these units were seen at the plant, they were usually parked/aligned in a column or grouped in what appeared to be the travel/shipping mode.

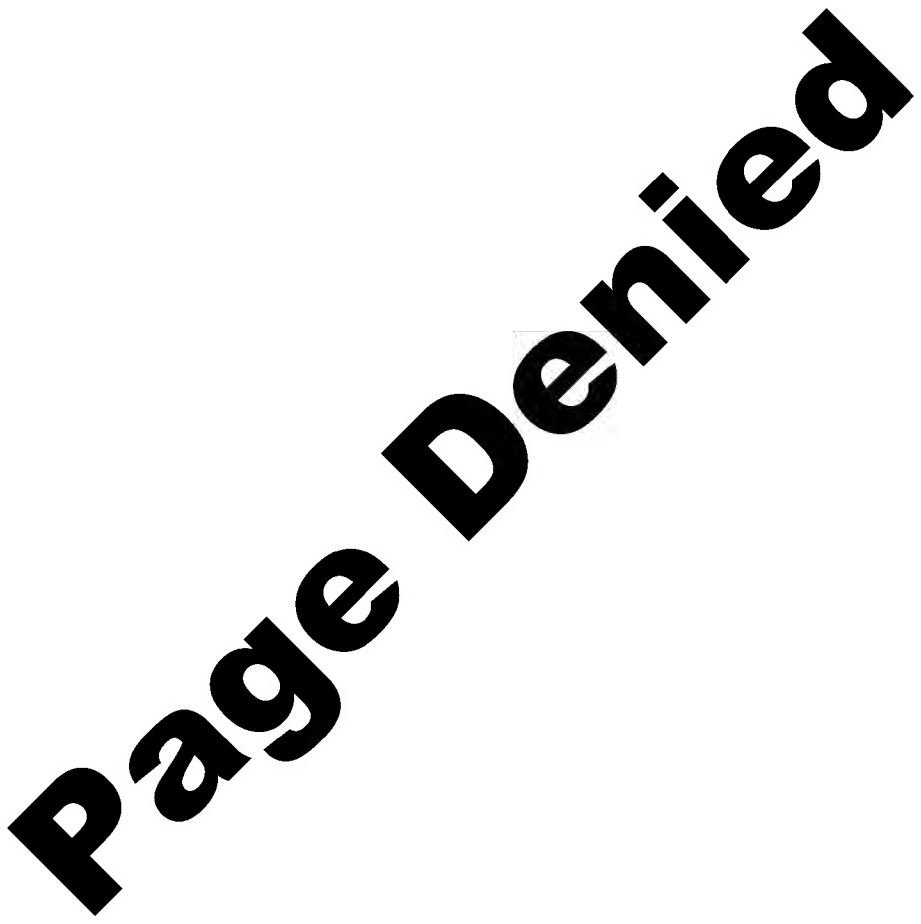
15. (TSR) On imagery of [redacted] two probable Sha-shih A units were grouped in the travel/shipping mode. On [redacted] the two probable units were aligned and appeared to be ready for shipping. On [redacted] (Figure 6), one probable unit was lined up and ready for shipping. On [redacted] a unit was grouped, and on [redacted] one unit may have been present but not grouped in the usual travel/shipping mode. On [redacted] no radar units were seen in the travel/shipping mode. On [redacted] (Figure 5), one probable Sha-shih A unit was lined up and appeared to be ready for shipment. On [redacted] (Figure 4), at least three probable units were either lined up or grouped in the travel/shipping mode; however, on [redacted] no Sha-shih A units were observed in the travel/shipping mode. It appears that at least five probable Sha-shih A units have been shipped from the plant since August 1977. 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1 25X1

16. (TSR) On several occasions during the reporting period, truck and probable van trailer chassis were observed parked in the test/checkout area of the plant (Figure 10). There have not been any imagery-derived indications that the vans were produced and assembled at Shashi and fitted to the van trailer/truck chassis. However, this could be accomplished inside one or more of the plant assembly buildings, and only the completed vehicles were seen outside. On imagery of [redacted] (Figure 2) and [redacted] nine probable shipping crates/boxes, [redacted] were along a plant service road in the older section of the plant. These probable shipping crates/boxes (similar in size and shape to the van trailers/van truck bodies) could be used for shipping/receiving radar component parts. In comparison, the van trailers that were present on [redacted] in the test/checkout area were [redacted] The van portion of the van trucks also seen on [redacted] 25X1 25X1 25X1 25X1 25X1 25X1

Imagery Analyst's Comments

17. [redacted] The CHOP REST long-range early warning (EW) radar has not been seen at the Shashi Radar Plant since December 1975. In addition, only two AW sites (Cheng-shan-hsu, BE [redacted] and Longtian) held in the NPIC Installations Data File (IDF) currently have confirmed CHOP REST radars. None of the nine ballistic missile EW system sites have the CHOP REST radar, but each has the TREE FORK 2 and Suuji-D long-range EW radars. The lack of production along with only two confirmed sites equipped with CHOP REST radars indicates that this radar is being phased out of the EOB inventory. 25X1 25X1

18. [redacted] The Sha-shih A and B radars appear to be variants of the MOON-series group of EW radars. The MOON-series group (MOON CONE and MOON FACE) are Chinese derivatives of the World War II-vintage US SCR-270 EW radars. The MOON-series radars (MOON CONE and MOON FACE) are widely deployed throughout China and have an estimated detection range of 250 kilometers against a 1-square-meter target at 12,000 meters altitude.[3] The Sha-shih A and B were probably designed for an EW role similar to the other MOON-series group. However, no signals have been associated with the radars to confirm the function or parameters of the radar. It is not known why the Chinese chose to modify the MOON-series radars or what will be gained by this modification. Apparently, the Sha-shih A and not the B is the radar that will be produced and deployed. 25X1



REFERENCES

IMAGERY

(S/D) All applicable imagery acquired from [redacted] was used in the preparation of this report. 25X1

MAP OR CHARTS

SAC. US Air Target Chart, Series 200, Sheet EC0494-14R, 4th ed, Mar 79, scale 1:200,000 (SECRET [redacted] 25X1 25X1

DOCUMENTS

1. NPIC. [redacted] RCA-20/0004/74, *Sha-shih Radar Assembly Plant*, Apr 74 (TOP SECRET [redacted] 25X1 25X1
2. NSA. Telecomm message [redacted] B-Group (B-31) (SECRET) 25X1
3. DIA. [redacted] DST-1710S-216-77-SAO, *EW/GCI/HF Radars – PRC (U)*, Feb 77 (TOP SECRET [redacted] 25X1 25X1 25X1

REQUIREMENT

COMIREX U01
Project 200006DU

(S) Comments and queries regarding this report are welcome. They may be directed to [redacted] Asian Forces Division, Imagery Exploitation Group, NPIC, [redacted] 25X1 25X1

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